

#### ABSTRACT OF THE DISCLOSURE

It is an object of the invention to provide a connection structure for connecting the dielectric strip of an NRD guide with a metal waveguide, in which the conversion loss (connection loss) for high-frequency signals is reduced, and in which the NRD guide as well as the millimeter wave integrated circuit in which the NRD guide is incorporated can be made smaller. A non-radiative dielectric waveguide is made by arranging a dielectric strip for propagating high-frequency signals between parallel planar conductors arranged at a spacing of not more than half the wavelength of a high-frequency signal, a conductive member being arranged at an end face of a terminal end of the dielectric strip. An aperture is formed in at least one of the parallel planar conductors at a location where the electrical field of an LSM mode stationary wave propagating along the dielectric strip becomes largest. An open terminal end of a metal waveguide is connected to this aperture.